

**POVERTY IN MONGOLIA:
COMPARING
THE 1995 AND 1998 LSMS
HEADCOUNTS**

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I. INTRODUCTION

Poverty in Mongolia has been variously defined and assessed since the transition began in 1990, resulting in differing figures of the number of people in poverty. These differing figures stem not only from different agencies and organizations, but sometimes from within the same agency. This can lead to confusion among the users of such information, including the Government of Mongolia, international donor organizations, and NGOs. Poverty data are used to formulate social policy, to monitor the efficacy of past or ongoing projects, to determine funding levels for future programs, to allocate scarce resources, and more generally to reflect upon the successes or failures of administrations and to gauge a country's overall level of development.

The purpose of this report is to examine closely the two most significant poverty measurement exercises in Mongolia to date: the 1995 and 1998 rounds of the Living Standards Measurement Surveys (LSMS), carried out by the National Statistics Office (NSO) with support from the World Bank (in 1995) and the UNDP (in 1998). The LSMS surveys produced a great deal of valuable data. The 1998 LSMS was arguably more comprehensive and more representative than the earlier round, producing richer findings. The scope of the analysis here is to address the specific question of whether it is possible to compare the poverty headcounts resulting from the 1995 and 1998 Living Standards Measurement Surveys.¹

While both the 1995 and 1998 headcount estimates are accurate in their own contexts, this report emphasizes that it is not proper use of LSMS results to compare the two headcounts to estimate trends in poverty levels from 1995 to 1998. Recent donor documents assume the LSMS data to be longitudinal. On that basis they make headcount comparisons and report that the poverty level in Mongolia has remained virtually unchanged at just over 1/3 of the population (36.3% in 1995 and 35.6% in 1998). Such comparisons cannot be supported with empirical evidence.

This report first looks at the 1995 and 1998 LSMS figure. It then examines other national statistics that point to an improvement in the wellbeing of the Mongolian population, making the stagnant headcount seem counterintuitive. Section 3 then closely assesses the LSMS methodology to determine where the problems lie.

II. THE 1995 AND 1998 LSMS DATA

According to the LSMS, poverty levels in Mongolia remained virtually stagnant between 1995 and 1998. The 1995 LSMS surveyed 1,500 households and determined that 36.3% of the Mongolian population, or 828,000 people, were poor. The 1998 LSMS surveyed

¹ This does not imply that the poverty headcount is the best or even an ideal measure of welfare. In fact, it is widely recognized to be inadequate on a number of counts. The headcount is the proportion of the population measured to be 'in poverty', that is below some calculated poverty threshold. Firstly, the headcount is a money-metric measure of income-poverty that does not take the wider dimensions of deprivation into account. Even bearing this in mind, the figure, expressed in percent, tells the user nothing of the depth or severity of income-poverty. A person could be just below the poverty line or very far below the poverty line and it would make no difference to the headcount. Furthermore, the headcount does not change when the overall number of people under the poverty line remains the same but when all or some of those people are overwhelmingly better or worse off. Nevertheless, the poverty headcount is very widely used as a generic indicator of a population's welfare and changes therein. Mongolia is no exception.

2,000 households and determined that 35.6%, or 849,800 people, were poor. (see Table 1). There was a slight drop in the poverty incidence in Ulaanbaatar (UB), but a slight increase in the overall urban poverty incidence. This indicates that the locus of poverty has shifted to other urban areas, i.e. to the aimag centers. However, the changes in both the aggregate and regional headcounts are all of the order of 1% or less and so must be interpreted with caution.

Table 1: Poverty Incidence in Mongolia, 1995 and 1998 LSMS

	Headcount (%)		Total Population ('000s)		Poor Population ('000s)	
	1995	1998	1995	1998	1995	1998
Urban	38.5	39.4	1,222.0	1,252.3	741.0	493.4
<i>UB</i>	35.1	34.1	610.0	649.8	214.0	221.6
<i>Aimag Centers</i>	/	45.1	/	602.5	/	271.8
Rural	33.1	32.6	1,058.0	1,134.7	350.0	369.9
Mongolia	36.3	35.6	2,280.0	2,387.0	828.0	849.8

Source: NSO/UNDP 1999:23 and World Bank, 1996:22 [NB: / = not available; n/a = not applicable]

The headcounts in Table 1 are based on the poverty lines depicted in Tables 2 and 3. The overall poverty line is made up of a food component and a non-food component.

Table 2: Poverty Lines in Mongolia by Region, 1998 LSMS

Region	Poverty Lines in Mongolia: Total, Urban, and Rural (Togrog per Capita per Month)								
	Total			Urban			Rural		
	Total	Food	% Food	Total	Food	% Food	Total	Food	% Food
Middle	13,514	9,795	72.5	13,908	9,808	70.5	13,422	9,791	72.9
Western	13,389	9,878	73.8	14,103	10,168	72.1	13,132	9,774	74.4
Eastern	13,330	10,071	75.6	13,588	9,934	73.1	13,192	10,143	76.9
Southern	15,916	11,352	71.3	16,463	11,083	67.3	15,589	11,512	73.8
Central	16,100	11,733	72.9	17,840	12,278	68.8	15,012	11,392	75.9
UB	17,446	11,842	67.9	17,446	11,842	67.9	n/a	n/a	n/a
Mongolia ²	/	/	/	/	/	/	/	/	/

Source: NSO data [not included in NSO/UNDP 1999]; [NB: / = not available; n/a = not applicable]

The poverty lines in Table 2 span a range from Tug. 13,132 per capita per month (Tug. 432 per day) in rural areas of the Western Region, to Tug. 17,446 (Tug. 574 per day) in UB. The share of food expenditure in the total poverty line ranges from 67.3% in urban areas of the Southern Region to 76.9% in rural areas of the Eastern Region. The food portion of the poverty line was calculated based on an average daily consumption of 2100 calories. However both the 1995 and 1998 surveys applied adult equivalency adjustments under which it was assumed, for example, that the very young and very old require fewer than 2100 calories, and adult males from 17-60 years of age require considerably more.

² The NSO did not calculate a national poverty threshold for the 1998 LSMS.

According to the Bank of Mongolia the average US Dollar – Mongolian Tugrik exchange rate for 1998 was \$1.00 = Tug. 837. The UB poverty line of Tug.17,446 per capita per month was thus approximately equivalent to \$ 20.84

Table 3: Poverty Lines in Mongolia by Aimag, 1995 LSMS

Aimag (Region)	Poverty Lines in Mongolia: Total, Urban, and Rural (Tugrik per Capita per Month)								
	Total			Urban			Rural		
	Total	Food	% Food	Total	Food	% Food	Total	Food	% Food
Arhangai (Middle)	/	/	/	6,415	4,907	76.5	5,146	3,904	75.9
Hovd (Western)	/	/	/	8,323	5,799	69.7	6,842	4,854	70.9
Dornod (Eastern)	/	/	/	6,519	4,731	72.6	5,730	4,105	71.6
Omnogov (Southern)	6,811	4,854	71.3	/	/	/	/	/	/
Tov (Central)	6,010	4,278	71.2	/	/	/	/	/	/
UB	8,053	5,564	69.1	8,053	5,564	69.1	n/a	n/a	n/a
Mongolia	7,240	5,084	70.2	/	/	/	/	/	/

Source: World Bank, 1996:21 [NB: / = not available; n/a = not applicable]

The 1995 poverty lines in Table 3 span a range from Tug. 5,730 per capita per month (or ca. Tug. 188 per day) in rural Dornod, to Tug. 8,053 (or ca. Tug. 265 per day) in UB. The share of food expenditure in the poverty line ranges from 69.1% in UB to 76.5% in urban Arhangai.

According to the Bank of Mongolia the average US Dollar – Mongolian Tugrik exchange rate for 1995 was \$1.00 = Tug. 447. The UB poverty line of Tug. 8,053 per capita per month was thus approximately equivalent to \$18.02.

Both the 1995 and 1998 LSMS make a further distinction between the poor and the very poor, and divide the non-poor population into three consumption categories. People are very poor if their consumption is below 75% of the poverty line. The poor fall between 75% of the poverty line and the poverty line itself. The non-poor population is divided into lower, middle, and upper groups. The lower group consumes between 100% and 150% of the poverty line; the middle group consumes between 150% and 225% of the poverty line, while the upper group consumes more than 225% of the poverty line. The consumption distribution of the Mongolian population is shown in Table 4 below.

Not only were there no great changes in poverty levels from 1995 to 1998, but it also appears that the distribution remained relatively constant. Again, most of the changes in Table 4 are of the order of less than 1%, so are not statistically significant.

Table 4: Consumption Distribution in Mongolia (% population)
1995 and 1998 LSMS

	Very Poor		Poor		Not Poor (Lower)		Not Poor (Middle)		Not Poor (Upper)	
	1995	1998	1995	1998	1995	1998	1995	1998	1995	1998
Urban	21.9	23.2	16.9	16.2	24.3	24.9	19.1	19.5	17.8	16.2
UB	/	20.3	/	13.8	/	23.4	/	20.9	/	21.6
Aimags	/	26.8	/	19.3	/	26.9	/	17.7	/	9.3
Rural	15.3	17.0	18.0	15.6	32.0	28.6	24.5	23.8	10.3	15.0
Total	19.1	19.7	17.4	15.9	27.5	27.0	21.3	21.9	14.7	15.5

Source: NSO/UNDP, 1999:39, World Bank, 1996: 38 [NB: / = not available; n/a = not applicable]

III. DID POVERTY LEVELS REMAIN UNCHANGED?

Where the LSMS poverty headcounts and consumption distributions show no apparent change between 1995 and 1998, there are multiple signs in other national statistics that together indicate that there may well have been an improvement in the wellbeing of the Mongolian population over that time period. Importantly, the macroeconomic environment improved. As pointed out in the NPAP Evaluation Report (GOM/UNDP/World Bank, October 1999), average real incomes increased from \$334 per capita in 1994 to \$452 by 1998, and it is unclear why the positive economic performance did not show up as a change in the overall poverty headcount.³ This question is particularly important because well over 50% of the GDP growth in Mongolia in the period 1995-1998 (6.2% of a total of 10.2% in real GDP growth) was created in the agricultural sector, in which over 50% of the population are engaged.⁴ According to NSO data, many other welfare indicators (for which income and expenditure based poverty headcounts are used as a proxy) have seen a positive change from 1995 to 1998 as well, including:

- increased life expectancy;
- decreased maternal and infant mortality rates;
- widened immunization coverage;
- decreased fertility rate;
- increased herd sizes among the poorest households;
- growing enrolment rates among 8 – 15 year olds;
- increased ownership of durable goods (TV, radio, sewing machines and vehicles) among herding households; and
- increased food consumption per capita

Two of the points above deserve particular attention. The first is the herd size question, the second is the increased food consumption among the poorest 40% of the population.

Herd Size

In the 1995 LSMS, the World Bank's probit estimates of the characteristics of the very poor determined that the size of a family's herd (i.e. livestock ownership) was one of the two most useful predictors of whether a family would be poor. This is no surprise given

³ Recognizing that GDP per capita taken alone is not an accurate indicator of welfare.

⁴ EPSP calculations from National Statistical Office data

the clear links between livestock ownership and command over food (meat and dairy) as well as fuel, skins, and other marketable products. The average herd size of rural families classified as poor and very poor in 1998 was over three times larger than that of families so classified in 1995 (see Table 5). This strongly suggests a change in the real definition of rural poverty. Average urban herd sizes increased dramatically as well.

Table 5: Average Herd Sizes by Consumption Group, 1995 and 1998

Consumption Group	Herd Size (No. of Animals)			
	Cattle & Horses		Sheep & Goats	
	1995	1998	1995	1998
Urban Very Poor	1.6	4.1	12.6	29.5
Urban Poor	4.4	9.7	5.6	45.6
Rural Very Poor	4.2	13.6	11.5	35.8
Rural Poor	5.5	24.5	23	67.5

Source: World Bank, 1996:32; and NSO/UNDP, 1999:103

Food Consumption

Food consumption is at the heart of an absolute definition of poverty and its measurement using a poverty line. There was a major improvement in consumption among the poorest 40% of the population between 1995 and 1998, according to NSO data. In 1998 these households were consuming on average 12% more meat and 32% more milk, in addition to 40% more rice, 80% more potatoes, and 335% more vegetables per capita per year (see Table 6). That a significant growth in caloric intake does not translate into increased welfare and a lower poverty headcount further suggests that the bar has in some way been raised.

Table 6: Nutrition Patterns of the Poor, NSO Household Surveys

Food Item	1994/95 consumption per capita per year	1998 consumption per capita per year
Meat, kg	38.4	42.8
Milk, l	36.3	47.9
Butter, kg	1.1	0.4
Flour, kg	63.3	63.0
Rice, kg	4.8	6.7
Bread, pieces	17.0	15.3
Potato, kg	4.0	7.2

Source: FIDE International, 1999:14

IV. HOW THE METHODOLOGIES DIFFER

The data examined so far implies that there was, in fact, some positive change in the welfare of the population of Mongolia between 1995 and 1998. That larger herds for the poorest, increased food intake for the poorest, and overall macroeconomic improvement together would not result in poverty reduction seems counterintuitive. This warrants an examination of the 1995 and 1998 LSMS methodologies.

On the surface, the methodologies for the derivation of poverty lines are identical in the two LSMS rounds. Poverty lines were calculated as follows:

1. Based on previous NSO household consumption surveys, a national minimum-needs food basket was determined. This food basket was based on the actual average food consumption of households in the bottom 40% of the per capita expenditure distribution, i.e. the poorest 40% of households in Mongolia. The amounts of food items in the food basket were scaled up to ensure that the basket would provide 2100 calories per day, the minimum amount deemed necessary to sustain life. In applying these lines adjustments were made to reflect lower or higher caloric requirements of different age groups of the population.
2. The required amounts of particular food items were then priced across regions, with urban and rural variations, to account for differences in regional and urban and rural purchasing power. The cost of the food basket, i.e. the food poverty line, was then calculated as the sum of the cost of individual items in the basket.
3. A particular amount was added to the food poverty line in order to account for necessary non-food spending. Rather than normatively defining required non-food items (clothing, consumer durables, housing and housing services, etc.), the non-food component of the poverty line was set equal to the typical non-food spending for those households who can just afford the minimum needs food basket. This means that their total spending is just equal to the food poverty line, but they displace some amount of (necessary) food expenditures in order to satisfy minimal non-food needs. This methodology results in a 'lower-bound' estimate of non-food needs.⁵

According to the 1998 LSMS Report, "in this survey the broad approach adopted was to try and replicate, as far as possible, the survey strategy, classification and indicators definitions adopted in 1995" (NSO/UNDP, 1999:5). However, we have seen above that 'poor' in 1995 seems to have meant something quite different than in 1998. Closer analysis shows that there are some fundamental differences in the two LSMS methodologies. There are issues with the aimags surveyed, issues with prices, issues with the food baskets, and issues with the adult equivalency scales.

Issue of aimags surveyed

In 1999 a US consulting firm, FIDE International, was commissioned by the UNDP to carry out a review of the 1998 LSMS. The resulting report concluded that the sample design adopted in 1998 was identical to the one used in 1995 with the country divided into 5 regions (FIDE, 1998:5). This statement misses an important difference. The 1995 survey was conducted in UB *plus five aimags*, one in each of the five regions: Arhangai (M), Dornod (E), Omnogobi (S), Tov (C-1), and Hovd (W). The 1998 survey was conducted in UB *plus seven aimags*: the original five plus Hovsgol (M) and Gobi-Altai (W).

These two aimags were added to the sampling frame by the NSO in 1998 in order to make the survey results more representative. Hovsgol in the Middle region has not only a large population compared to other aimags in that area, but also contains a number of different ethnic groups that maintain unique lifestyles. The topography of the region is also quite varied. While Arhangai tends to be representative of the other aimags in the Middle region, it does not represent ethnically diverse and geographically differentiated Hovsgol. Gobi-Altai in the Western region was added for similar reasons: Hovd is representative of the other Western aimags except Gobi-Altai, which contains a sizeable

⁵ In contrast, the 'upper-bound' method involves inflating the food poverty line by the average amount spent on non-food items by families whose total food expenditures just equal the food poverty line.

desert. The main source of livelihood in the Western region is herding, but there are differences for herders in mountainous areas, steppes, deserts, etc. Including only residents of Hovd in the sampling frame would not capture the variation of the Western region.

Maximum representation is of course desirable in any survey. However, changing the sampling frame between two rounds of a survey is ill-advised if comparability is not to be compromised. Hovsgol and Gobi-Altai are among the poorest aimags of Mongolia. This is bound to have introduced bias to the 1998 results.

Issue of prices

The World Bank used June 1995 prices to value the food and non-food components of the consumption basket in order to construct the poverty line. “All prices were either taken from the LSMS Price Survey (June 1995) or estimated based on LSMS prices and reported prices in the June 1995 Monthly Household Survey” (World Bank, 1996: 95). However, it is important to note that the World Bank constructed food price lists for just three aimags covered in the LSMS survey (Arhangai, Dornod and Hovd) and for Ulaanbaatar city, as “there was not sufficient information to develop a food price vector for either Omnogov or Tov aimags” (World Bank, 1996:93). The estimated lines for Omnogov and Tov (and thus the national poverty line) could very well be underestimated or overestimated.⁶

The NSO/UNDP 1998 LSMS, on the other hand, surveyed food prices in all 7 aimags and UB. The pricing of the poverty lines is thus undoubtedly more accurate.⁷

Issue of food baskets

The composition of the food baskets is the most important determinant of the overall poverty line and must remain constant if poverty lines are to be ultimately comparable. Table 7 below shows that there is a certain degree of variation in the composition of the 1995 and 1998 LSMS food baskets.

The 1995 and 1998 food baskets differ in two very important regards. First, two items were added to the 1998 basket that were not included in 1995: vegetable oil and fat. Second, there was a change in the amount of calories derived from particular food items. In 1995, 10% of total calories in the food basket came from dairy products (i.e. milk and butter). In 1998, 12% of total calories came from dairy products. In 1995, 68% of total calories in the food basket came from starch (i.e. flour, rice, bread, and potato). In 1998 this dropped to 62%.

⁶ One clue that casts doubt on the accuracy of the World Bank is the fact that the regional prices for one kilo of beef and one kilo of ‘other meat’ are identical down to the last Tugrik and fraction thereof.

⁷ Both the 1995 and 1998 LSMS made use of June prices for the calculation of the poverty threshold. This may not be ideal as prices in Mongolia (particularly for animal products) tend to be at their highest at this time of year.

Table 7: Composition of the 1995 and 1998 LSMS Food Baskets

Food Items	Amounts Per Person Per Year			Daily Calorie Intake Per Capita		
	1995	1998	% change 1995-1998	1995	1998	% change 1995-1998
Beef, kg	9.77	9.47	- 3%	58.9	57.1	- 3%
Mutton, kg	16.95	17.55	+ 4%	102.2	105.8	+ 4%
Other meat, kg	9.35	13.23	+ 41%	57.6	81.5	+ 41%
Sub meat, kg	36.30	31.20	- 14%	174.0	149.6	- 14%
Milk, liter	80.98	91.45	+ 13%	171.9	194.1	+ 13%
Butter, kg	2.44	2.88	+ 18%	49.1	57.9	+ 18%
Flour, kg	141.19	126.30	- 11%	1,288.9	1,153.0	- 11%
Rice, kg	10.66	12.83	+ 20%	96.4	116.0	+ 20%
Bread, piece	37.87	29.13	- 33%	10.4	8.0	- 33%
Potato, kg	8.87	13.70	+ 54%	21.8	33.7	+ 55%
Vegetables, kg	2.59	9.13	+253%	1.5	5.3	+253%
Sugar, kg	4.56	6.09	+ 34%	48.9	65.3	+ 34%
Fruit, kg	1.09	0.22	- 80%	11.7	2.3	- 80%
Vegetable oil, kg	--	0.84	--	--	20.0	--
Fat, kg	--	2.11	--	--	50.4	--
Tea, kg	1.85	2.27	+ 23%	--	--	--
Salt, kg	4.61	5.75	+ 25%	--	--	--
Eggs, piece	0.85	3.40	+300%	--	--	--
TOTAL				2093.3	2,100.0	

Source: World Bank, 1996:94 and NSO/UNDP, 1999:15

From Table 7 above, it appears as though identical food item to calorie conversion rates were used, given that the 1995-1998 percent change in amounts of food leads to identical percent changes in calories from that food item.⁸ On closer investigation, Table 8 shows that there is just one very subtle difference: where fruit used to provide 3.92 calories per gram in 1995, it provided 3.82 calories per gram in 1998. The more interesting issue raised by Table 8 is the very high caloric value of the two food items added to the food basket in 1998. Fat and vegetable oil both have much higher calorie values per gram than all other food items in the basket.

Another issue related to the food baskets is the share of food in the overall poverty line. This has changed fairly substantially for some regions, notably – 6% in Middle region urban areas, and + 5.3% in Eastern region rural areas.

⁸ The precise source of these calorie conversion rates is not exactly clear. The NSO replicated those of the World Bank.

Table 8: Calorie Conversion Rates, 1995 and 1998⁹

Food Item	1995 kcal per gram (or ml)	1998 kcal per gram (or ml)
Beef, kg	2.20	2.20
Mutton, kg	2.20	2.20
Other meat, kg	2.25	2.25
Sub meat, kg	1.75	1.75
Milk, liter	0.77	0.77
Butter, kg	7.34	7.34
Flour, kg	3.33	3.33
Rice, kg	3.30	3.30
Potato, kg	0.90	0.90
Vegetables, kg	0.21	0.21
Sugar, kg	3.91	3.91
Fruit, kg	3.92	3.82
Vegetable oil, kg	n/a	8.69
Fat, kg	n/a	8.72

Source: author's calculations using World Bank and NSO/UNDP food basket data

Table 9 below draws comparisons from Tables 2 and 3. Comparisons can only be made in areas for which the World Bank constructed poverty lines.

Table 9: Share of Food in the Total Poverty Line, 1995 and 1998

Region	Food Share in Total Poverty Line (%)					
	Total		Urban		Rural	
	1995	1998	1995	1998	1995	1998
Middle	/	72.5	76.5	70.5	75.9	72.9
Western	/	73.8	69.7	72.1	70.9	74.4
Eastern	/	75.6	72.6	73.1	71.6	76.9
Southern	71.3	71.3	/	67.3	/	73.8
Central	71.2	72.9	/	68.8	/	75.9
UB	69.1	67.9	69.1	67.9	/	n/a
National	70.2	n/a	/	n/a	/	n/a

[NB: / = not available; n/a = not applicable]

Issue of adult equivalency adjustments

In both the 1995 and 1998 LSMS an effort was made to factor in the very different caloric requirements of different age groups of the population.¹⁰ However, the two surveys used different methodologies in utilizing adult equivalency adjustments.

Both surveys used identical coefficients to determine the ration of consumption needs of different age groups. These are presented in Table 10, below.

⁹ The number of calories per "piece" (=loaf) of bread is 100.24 in both years.

¹⁰ The use of adult equivalency scales is common practice in poverty measurement. It is based on the recognition that classifying a one-month-old infant, a 21-year-old man, and a 75-year-old woman as poor or not-poor based on their ability to obtain one identical daily consumption basket would not be accurate.

Table 10: Daily required calorie intake, adult equivalency scale

Gender and Age	Adult equivalent	Daily calorie intake
Male and Female		
0-3 months	0.22	462
4-6 months	0.32	672
7-11 months	0.39	819
1-33 years	0.52	1092
4-7 years	0.65	1365
8-10 years	0.73	1533
Male		
11-14 years	0.92	1932
15-17 years	1.07	2247
18-59 years	1.27	2667
60 +	0.96	2016
Female		
11-14 years	0.80	1680
15-17 years	0.84	1764
18-54 years	1.04	2184
55 +	0.96	2016

Source: 1998 LSMS

In 1995, these coefficients were utilized in a somewhat unusual manner. In each region of the country, a modified poverty line was constructed based on two factors: a) the cost of the 2100-calorie based consumption basket, and b) the age structure of the region's population.

First, in each region, a new poverty line was calculated for each age group, applying the age adjustment coefficient to the local cost of the 2100-calorie food basket. Then a new regional line was calculated as a weighted average of the various age group lines (where the weights were the proportion of the local population falling into that group). This new regional line was applied to all households in the survey, without examining the age and gender composition of the members of those households. If a household consists of one adult and five very young children, or if it consists of two adults and four teenage children, its age structure and per capita consumption needs would clearly differ from those of the average six-member household in the region. But each of those households would have been classified as poor or not poor based on a comparison of its consumption with an amount equal to six times the adjusted regional poverty line.

In 1998 a more direct methodology was used. Poverty lines for each region were calculated based on local prices, without adjustment for age and gender composition of the population. However, when these lines were applied to the actual consumption levels of the surveyed households, the size of each household, and its minimum consumption needs, were adjusted based on the age and gender of its members (unlike in 1995).

The 1998 methodology is clearly an improvement over the one applied in 1995. However, so significant a change in methodology raises new doubts about the comparability of findings from the two surveys.

V. COMPARING HEADCOUNTS FROM DIFFERENT SURVEYS

One of the most fundamental rules of poverty assessment is that great care must be taken in attempting to compare poverty headcounts from different surveys. For poverty headcounts to be comparable, the definition of poverty must remain constant over time, as must survey methodology. Changes to the 1998 LSMS methodology made it more comprehensive, more representative, and better suited to Mongolian conditions. While the improved methodology is commendable, it makes direct comparisons of the resulting headcounts inadvisable. The FIDE assessment of the 1998 LSMS emphasized this point as well:

Our second observation concerns comparability of results with those obtained from the 1995 survey. We have earlier advised caution in drawing conclusions from such comparisons. We reiterate this point. The observed differences/changes can be attributed to a number of factors, which include: differences arising from changes in classifications, definitions, coverage, methods of aggregation, and sampling error. Thus, real changes are likely to be difficult to separate out” (FIDE, 1999:7, emphasis added).

This report has revealed important differences not uncovered by FIDE. These include:

- expanded survey coverage (two aimags added to the original 5 plus UB);
- added food items in the consumption basket (two items added to the original 16);
- adjusted food share in the total poverty lines;
- revised proportions of total calories derived from different food items and groups; and
- modified adult equivalency adjustment.

These issues make comparisons of the headcounts impossible. Statements that poverty has stabilized (and that poverty alleviation efforts by the GOM and programs such as NPAP have been relatively ineffective) are thus based on improper use of the LSMS survey results.

In order to make a robust comparison of headcounts from different surveys, the basic building blocks of the poverty threshold must be identical (see Lanjow and Ravallion, 1996). For this reason, we set out to value the 1995 food basket at 1998 prices. Rather than using the 1995 share of food in the overall line, however, we factor in the recent changes in relative prices in Mongolia by using the 1998 food to non-food ratio.

Findings for UB indicate a new, comparable poverty threshold for 1998 that is lower than the official one by more than Tug. 300.¹¹ Given the high sensitivity of the poverty headcount to the placement of the poverty line, the resulting headcount is bound to be a significant amount lower. Unfortunately, 1998 LSMS data on expenditure distribution was impossible to obtain. The 1995 World Bank analysis found a high elasticity of the poverty threshold: a 10% decrease in poverty line would result in a greater than 20% drop in the poverty headcount. This analysis was not replicated in the 1998 LSMS report. FIDE, however, found the sensitivity of the headcount to the placement of the poverty line to be 2.36 in 1998 (FIDE, 1999:13).

¹¹ This depends very strongly on the set of prices used. On two separate occasions NSO furnished two very different sets of ‘1998 LSMS prices’ (urban and rural, by aimag). For example, the UB price of 1kg of butter varies by Tug. 550. More significantly, given nearly 12kg in the monthly food basket, the UB price of flour varies by Tug. 36. This seemingly small difference can raise or lower the calculated food poverty line by over Tug. 400. Using the alternative set of prices furnished by the NSO, the ‘new’ poverty line for UB could be over Tug. 1,400 lower than the 1998 LSMS line.

The same analysis – valuing the 1995 food basket at 1998 prices – was replicated for urban and rural aimags (see Annex 1). Interestingly, of a total 15 poverty lines, 8 were lower (one by as much as Tug. 832) and 7 were higher (the highest by Tug. 297). The new line for Ulaanbaatar, with a far larger share of total population than any other region, is 334 togrogs, or 1.9%, lower than the line used in the 1998 LSMS. Applying the 2.36 elasticity suggested by FIDE suggests that the Ulaanbaatar poverty headcount was overestimated by 4.5% compared to what it would have been using the 1995 food basket. Using the new line would reduce the Ulaanbaatar head count by over 10,000 people, and indicate that the number of poor people in Ulaanbaatar actually fell between 1995 and 1998, even while the overall population grew substantially. Of course, the different use of adult equivalency adjustments raises doubts about even so clear a comparison as this.

The methodology changes and resulting incomparability of headcount indices by no means imply that the 1998 LSMS data is not a significant source of rich and descriptive data on poverty in Mongolia. Given the nature of the changes made, the 1998 LSMS clearly represents an improvement over the 1995 round. Some types of comparability are still possible, particularly comparisons of trends in the characteristics of the poorest people. This work should be taken further than it has been. With a complete set of the World Bank's 1995 data files on hand, access must now be gained to the 1998 LSMS files so that much more work can be done. Continuing and deepening this work would go toward explain some of the seeming incongruities in 1998 LSMS results, such as the significant increase in food consumption among the bottom 40% of the population in addition to a large increase in the size of herds among the poorest in both rural and urban areas.

Preliminary findings of this study were presented to a round table of donor representatives in UB in February 2000. As a result, in planning future poverty-related programs, the UNDP has proposed that the 2001 LSMS include a significant TA component to construct robust longitudinal data from the three survey rounds.

VI. FUTURE LSMS ROUNDS

As the UNDP has recognized, a focus on robust longitudinal data will be particularly relevant if the 2001 LSMS includes further methodological refinements which, in fact, it should. One change that ought to be considered is related to the current use of just one food basket nationwide. Problems of accuracy arise from not distinguishing between rural and urban consumption baskets for the poor. Food consumption patterns differ greatly between rural and urban areas, due to sharply different relative animal- and non-animal food product prices for herders and urban households.

Poverty lines are now based on pricing one average food basket that includes more meat and dairy products than urban families consume, and more non-animal food products than herding households consume. This methodology overestimates poverty for both types of households. Rural households in Mongolia consume a great deal more meat and milk products than do urban households. Average figures show that the very poor households consume 32 kg of meat and 60 liters milk per capita per year. Disaggregated figures, however, reveal that the rural very poor are consuming nearly twice the amount of meat (41kg vs. 24 kg) and four times the amount of milk (101 liters vs. 24 liters) than the urban very poor. The ratio of rural to urban daily calorie consumption is 1.4 for the

very poor and 1.5 for the poor. The rural poor are even consuming more calories per day, on average, than the urban not poor (middle) group. This further underscores the necessity for region-specific food baskets.

Another issue concerns the use of June prices in both the 1995 and 1998 surveys. For example, the Ulaanbaatar poverty line was constructed by multiplying annual consumption of meat, milk and vegetables by the June prices for those goods. It is important to recognize that food prices are highly seasonal in Mongolia, and that June is generally the month in which most are at their peak, as new fresh meat, milk and vegetables start to come on the market in larger quantities during the Summer. Meat prices in June are typically at least 70% higher than they are in the Fall and early Winter, when the largest quantities are purchased.

VII. CONCLUSION: THE PITFALLS OF POVERTY MEASUREMENT

This study has highlighted one of the more significant pitfalls in poverty measurement. For headcounts to be strictly comparable, the surveys and methodologies on which they are based must be identical down to the last detail. We have shown that in the case of Mongolian LSMS rounds there were significant changes in five important areas. These render comparisons fairly meaningless. Further work will be required in order to construct robust longitudinal data. Importantly, this will require unrestricted access to the 1998 LSMS data files.

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